

Amendment to the Claims:

This listing of claims replaces all prior versions, and listings, of claims in the application:

1. (Cancelled)

2. (New) A method, comprising:

storing a higher definition television image;  
reading locations from the memory at an image update rate  
to fetch first pixels in the image, which are vertically  
contiguous in the image;

vertically scaling the first pixels to produce a vertically  
scaled set of pixels representing scaling of the entire  
television image; and

after said vertically scaling of the entire image, reading  
the vertically scaled, set of pixel segments from the memory at  
an image display rate and horizontally scaling each vertically  
scaled horizontal pixel segment of the vertically scaled image  
at the image display rate to form a final two-dimensional scaled  
image of a lower definition.

3. (New) The method of claim 2, further comprising:  
storing, reading, and scaling a sequence of images from  
said higher definition television images representing video  
sequence of images to said lower definition sequence of images;  
and  
displaying said lower definition sequence of images.

4. (New) The method of claim 2 wherein said vertically  
scaling comprises reading  $X$  locations from a memory at an image  
update rate by reading a plurality of luminance planes in a pre-  
determined order.

5. (New) The method of claim 2 in which the vertical  
scaling occurs at a rate that is smaller than a rate at which  
the horizontal scaling occurs.

6. (New) An apparatus comprising:  
a memory operable to store a higher definition television  
image;  
a scaling element, configured to first fetch pixels of the  
higher definition television image and to vertically scale the  $X$   
higher definition pixels to produce a vertically scaled image of

contiguous, vertically scaled, horizontal pixels in the memory and to read pixels of the vertically scaled image only after the entire vertically scaled image has been formed, at an image display rate and horizontally scale pixels of the vertically scaled image at the image display rate to form a lower definition image of pixel representing a final two-dimensional scaled image; and

a computer monitor operable to display the final two-dimensional scaled image.

7. (New) The apparatus of claim 6 wherein the memory, and scaling element store, read, and scale a plurality of images in a high definition television video sequence of images.

8. (New) The apparatus of claim 6 in which the scaling element comprises at least one integrated circuit.

9. (New) The apparatus of claim 6 wherein the scaling element reads locations in the memory at an image update rate by reading a plurality of luminance planes in a pre-determined order.

10. (New) The apparatus of claim 6 in which the vertical scaling occurs at a rate that is smaller than a rate at which the horizontal scaling occurs.

11. (New) The apparatus of claim 6 wherein the first element comprises a memory interface, an input pixel formatting circuit, a pixel filtering circuit and an output pixel formatting circuit.

12. (New) The apparatus of claim 11 in which the input pixel formatting circuit has three sets of luminance plane inputs.

13. (New) The apparatus of claim 11 in which the pixel filtering circuit operates on both luminance and chrominance pixels, the pixel filtering circuit receiving and outputting horizontal pixel segments of a similar size.

14. (New) The apparatus of claim 6 in which the scaling element includes a polyphase filter.

15. (New) An article comprising a computer-readable medium which stores computer-executable instructions for scaling each high definition television image that appears in a video sequence of images for display on a computer monitor that displays downscaled images, the instructions causing a computer to:

- storing a higher definition television image;
- reading locations from the memory at an image update rate to fetch first pixels in the image, which are vertically contiguous in the image;
- vertically scaling the first pixels to produce a vertically scaled set of pixels representing scaling of the entire television image; and
- after said vertically scaling of the entire image, reading the vertically scaled, set of pixel segments from the memory at an image display rate and horizontally scaling each vertically scaled horizontal pixel segment of the vertically scaled image at the image display rate to form a final two-dimensional scaled image of a lower definition.